DTμL 9093 • 9094 • 9097 • 9099

DUAL MONOLITHIC, CLOCKED J-K FLIP-FLOPS DIODE TRANSISTOR MICROLOGIC® INTEGRATED CIRCUITS

TEMPERATURE RANGE: −55°C to +125°C, −20°C to +100°C, 0°C to +75°C

General Description:

- The 9093 and 9094 devices are Dual Monolithic, internally connected J-K flip-flops of the 9945 and 9948 DTμL type respectively. These devices have separate clocks, separate J and K inputs, separate Direct Set inputs and no Direct Clear input (refer to logic diagram).
- The 9097 and 9099 devices are also Dual Monolithic, internally connected J-K flip-flops of the 9948 and 9945 DTμL type respectively. These devices have separate J and K inputs, separate Direct Set inputs, a common clock input pin and a common Direct Clear input pin (refer to logic diagram).

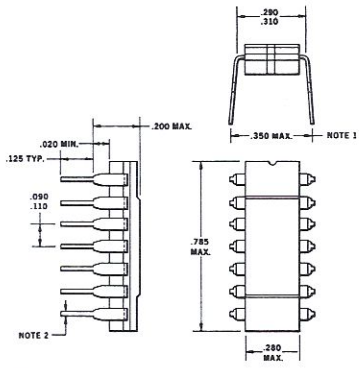
Typical Applications:

- Shift Registers
- Two individually operated flip-flops
- Counters

Features:

- Compatible with all DTμL 930 series
- Compatible with TTμL
- Reduced can count
- Greater logic flexibility

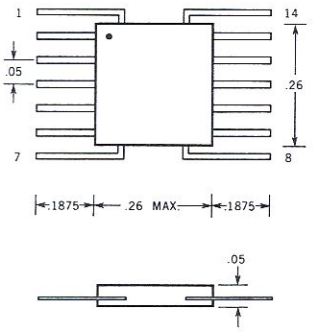
TYPICAL DUAL IN-LINE* PACKAGE



NOTES:
1. Leads are intended for insertion in hole rows on .300" centers. They are purposely shipped with "positive" (.350) misalignment to facilitate insertion.
2. Board-drilling dimensions should equal your practice for a conventional .020 inch diameter lead.

TYPICAL FLAT PACKAGE

TOP VIEW



ABSOLUTE MAXIMUM RATINGS

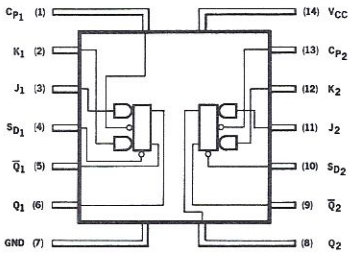
Supply Voltage (V_{CC}) Continuous	+8.0 Volts
Supply Voltage (V_{CC}) Pulsed <1.0 second	+12.0 Volts
Internal Power Dissipation 25°C Ambient	500 mW
Typical Power Dissipation 5 V (V_{CC})	100 mW
Operating Temperature Range	−55° to +125°C
Storage Temperature Range	+65°C to +150°C
Lead Temperature (Soldering 60 second)	300°C

LOADING RULES

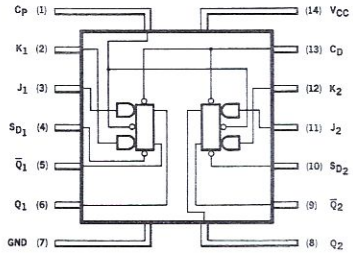
• INPUTS	9093/9094	9097/9099	• FANOUT	−55°C to +125°C −20°C to +100°C	0°C to 75°C
	C_{P1} or C_{P2} = 2	C_P = 4	9093 — Q_1, = Q_2, = $\overline{Q_1}$, = $\overline{Q_2}$ =	12	10
	K_1 or K_2 = ⅔	K_1 or K_2 = ⅔	9094 — Q_1 = Q_2 = $\overline{Q_1}$ = $\overline{Q_2}$ =	11	9
	J_1 or J_2 = ⅔	J_1 or J_2 = ⅔	9097 — Q_1 = Q_2 = $\overline{Q_1}$ = $\overline{Q_2}$ =	11	9
	S_{D1} or S_{D2} = 2	S_{D1} or S_{D2} = 2 C_D = 4	9099 — Q_1 = Q_2 = $\overline{Q_1}$ = $\overline{Q_2}$ =	12	10

PIN CONFIGURATION: Identical for dual-in-line and flat packages.

9093/9094
(DUAL 9945/9948 SEPARATE S_D; SEPARATE Cp)



9097/9099
(DUAL 9948/9945 COMMON Cp; COMMON C_D)



PURCHASING INFORMATION:

To order Diode Transistor Micrologic Integrated Circuit elements specify U31XXXX5XX for flat package and U6A-XXXX5XX for Dual In-line package, where XXXX is 9093, 9094, 9097, or 9099, and 5X is 51 for the −55°C to +125°C temperature range, 56 for the −20°C to +100°C temperature range or 59 for the 0°C to 75°C temperature range.

* Fairchild patent Pending

313 FAIRCHILD DRIVE, MOUNTAIN VIEW, CALIFORNIA, (415) 962-5011, TWX: 910-379-6435

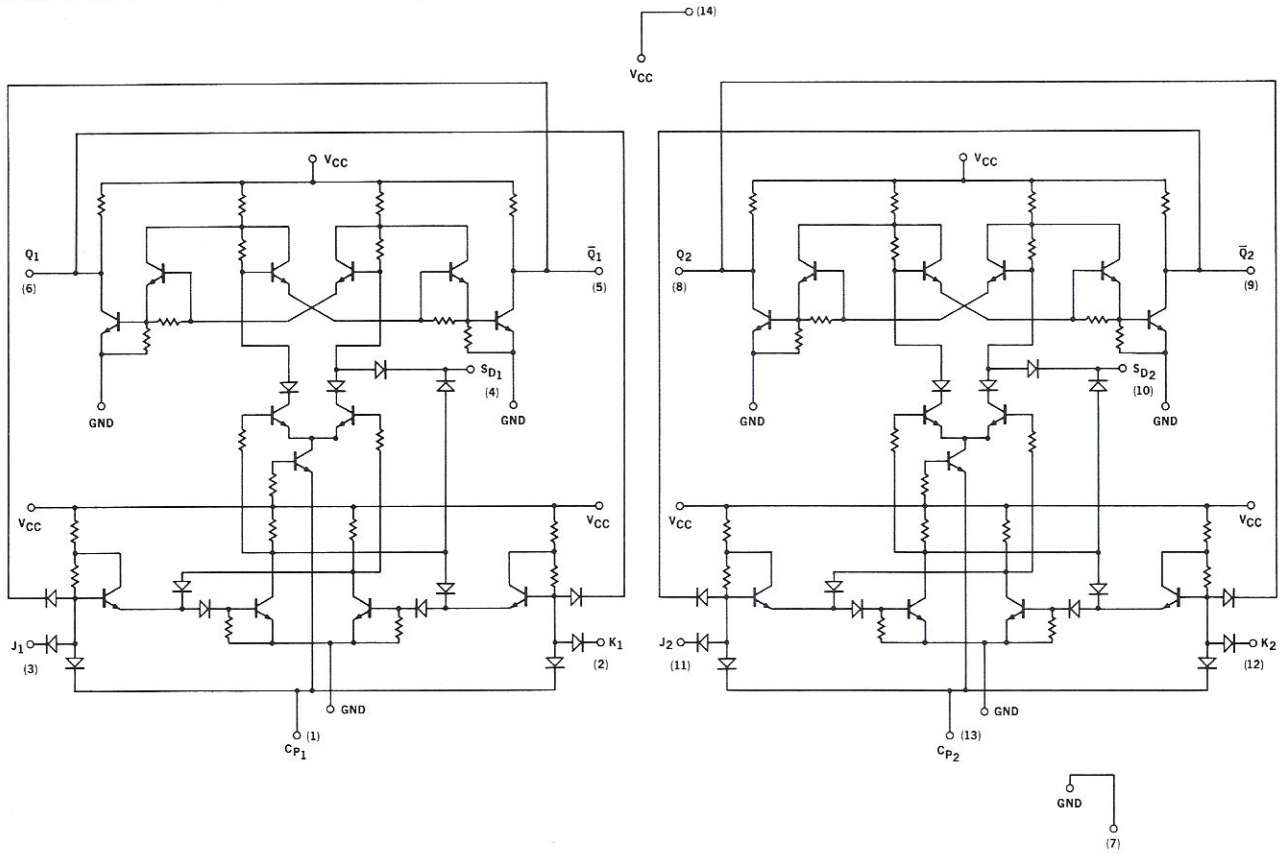
FAIRCHILD SEMICONDUCTOR
A DIVISION OF FAIRCHILD CAMERA AND INSTRUMENT CORPORATION

COPYRIGHT FAIRCHILD SEMICONDUCTOR, 1967 • PRINTED IN U.S.A. 2320-469-116 30M

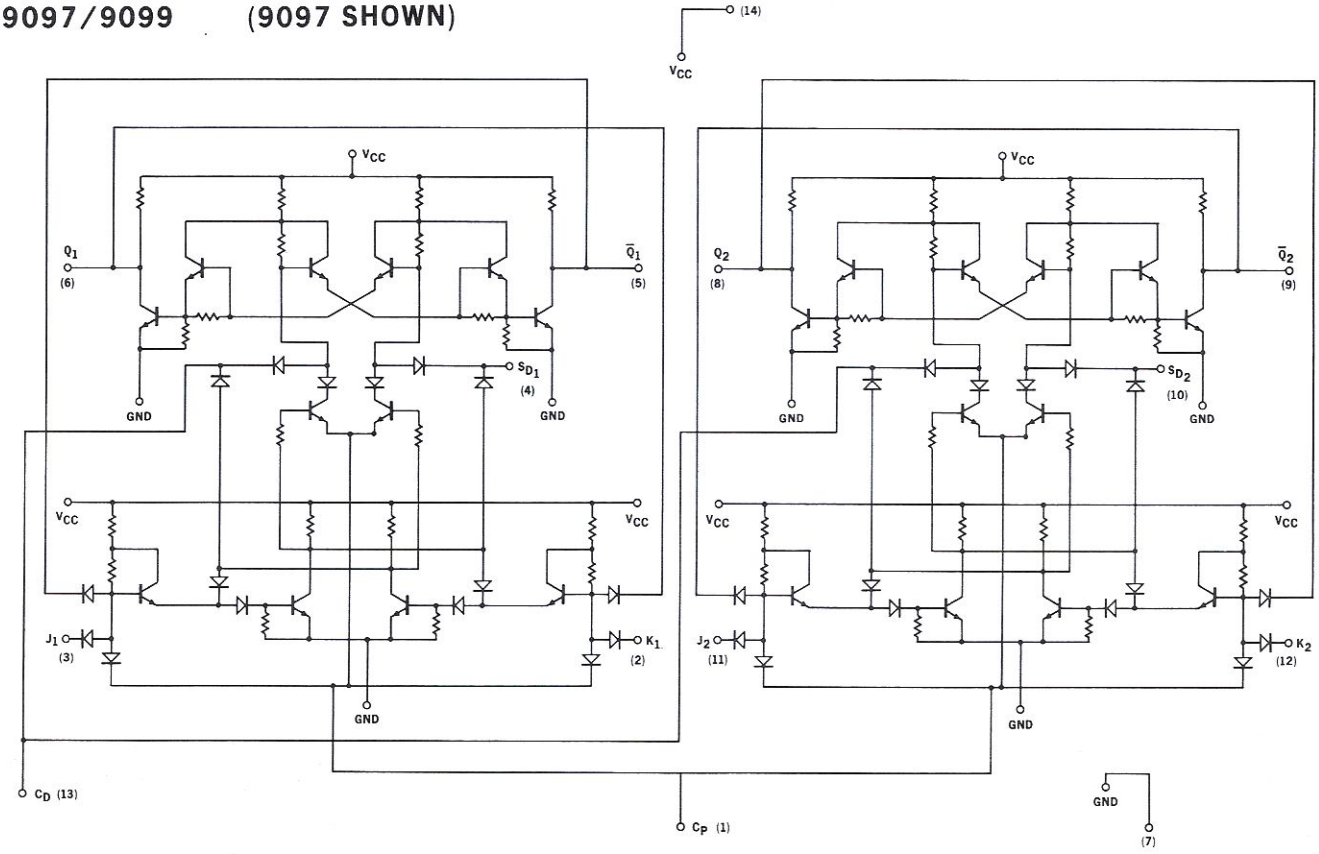
MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U. S. PATENTS: 291877, 3015048, 3025589, 3064167, 3108359, 3117260; OTHER PATENTS PENDING.

FAIRCHILD TRANSISTORS DTμL 9093•9094•9097•9099

9093/9094 (9093 SHOWN)



9097/9099 (9097 SHOWN)



Fairchild cannot assume responsibility for use of any circuitry described other than circuitry entirely embodied in a Fairchild product. No other circuit patent licenses are implied.